What is claimed is:

 A method for determining whether a transcript is present in a biological sample comprising:

providing a plurality of perfect match intensity values (PM_i) and mismatch intensity values (MM_i) for the transcript, wherein each of the PM_i is paired with one of the MM_i :

calculating a p-value using one-sided Wilcoxon's signed rank test, wherein the p-value is for a null hypothesis that θ =a threshold value and an alternative hypothesis that said θ > said threshold value, wherein said θ is a test statistic for intensity difference between said perfect match intensity values and mismatch intensity values; and

indicating whether said transcript is present based upon said p-value.

- 2. The method of Claim 1 wherein said testing statistic is $median(PM_i-MM_i)$.
- 3. The method of Claim 2 wherein said threshold value is zero.
- 4. The method of Claim 2 wherein said threshold value is calculated using: $\tau_1 = c_1 \sqrt{median(PM_i)}$ wherein said c_I is a constant.
- 5. The method of Claim 2 wherein threshold value is calculated using: $\tau_1 = c_1 \sqrt{mean(PM_i)}$ wherein said c_1 is a constant.

- 6. The method of Claim 2 wherein said step of indicating comprises indicating said transcript is present if said p is smaller than a first significance level (α_1) .
- 7. The method of Claim 6 wherein said significance level is 0.01-0.08.
- 8. The method of Claim 7 wherein said first significance level is 0.04.
- 9. The method of Claim 7 wherein said step of indicating further comprises indicating said transcript is absent if said p is greater than or equal to a second significance level (α_2) .
- 10. The method of Claim 9 wherein and second significance level is 0.04-0.08.
- 11. The method of Claim 10 wherein said second significance level is 0.06.
- 12. The method of Claim 11 wherein said first significance level (α_1) is smaller than said (α_2) and said step of indicating further comprises indicating said transcript is marginally detected if $\alpha_1 \le p < \alpha_2$.
- 13. The method of Claim 12 where first significance level is 0.04 and second significance level is 0.06.

- 14. The method of Claim 1 wherein said testing statistic is $median((PM_i-MM_i)/(PM_+MM_i))$.
- 15. The method of Claim 14 wherein said threshold value is a constant.
- 16. The method of Claim 15 wherein said threshold value is around 0.001 to 0.05.
- 17. The method of Claim 16 wherein said threshold value is around 0.015.
- 18. The method of Claim 17 wherein said step of indicating comprises indicating said transcript is present if said p is smaller than a first significance level (α_1) .
- 19. The method of Claim 18 wherein said significance level is 0.01-0.08.
- 20. The method of Claim 19 wherein said first significance level is 0.04.
- 21. The method of Claim 20 wherein said step of indicating further comprises indicating said transcript is absent if said p is greater than a second significance level (α_2) .
- 22. The method of Claim 21 where maid second significance level is 0.04-0.08.

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- 23. The method of Claim 22 wherein said second significance level is 0.06.
- 24. The method of Claim 22 wherein said first significance level (α_1) is smaller than said (α_2) and said step of indicating further comprises indicating said transcript is marginally detected if $\alpha_1 \le p < \alpha_2$.
- 25. The method of Claim 24 where first significance level is 0.04 and second significance level is 0.06.
- 26. A method for determining whether a transcript is present in a biological sample comprising:

providing a plurality of perfect match intensity values (PM_i) and background intensity values (B_i) for said transcript, wherein each of said PM_i is paired with one of said B_i ;

calculating a p value using one sided Wilcoxon's signed rank test, wherein said p value is for a null hypothesis that θ =a threshold value and an alternative hypothesis that said θ > said threshold value, wherein said θ is a test statistic for intensity difference between said perfect match intensity values and background intensity values; and

indicating whether said transcript is present based upon said p value.

- 27. The method of Claim 26 wherein said testing statistic is $median(PM_i-B_i)$.
- 28. The method of Claim 27 wherein said threshold value is zero.



- 29. The method of Claim 27 wherein said threshold value is calculated using: $\tau_1 = c_1 \sqrt{median(PM)}$ wherein said c_I is a constant.
- 30. The method of Claim 27 wherein threshold value is calculated using: $\tau_3 = c_3 \sqrt{mean(PM_i)}$ wherein said c_3 is a constant.
- 31. The method of Claim 27 wherein said step of indicating comprises indicating said transcript is present if said p is smaller than a first significance level (α_1) .
- 32. The method of Claim 31 wherein said significance level is 0.01-0.08.
- 33. The method of Claim 32 wherein said first significance level is 0.04.
- 34. The method of Claim 31 wherein said step of indicating further comprises indicating said transcript is absent if said p is greater than a second significance level (α_2) .
- 35. The method of Claim 34 wherein said second significance level is 0.04-0.08.

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- 36. The method of Clarm 35 wherein said second significance level is 0.06.
- 37. The method of Claim 35 wherein said first significance level (α_1) is smaller than said (α_2) and said step of indicating further comprises indicating said transcript is marginally detected if $\alpha_1 \le p < \alpha_2$.
- 38. The method of Claim 37 where first significance level is 0.04 and second significance level is 0.06.
- 39. A computer software product comprising:

computer program code for inputting a plurality of perfect match intensity values (PM_i) and mismatch intensity values (MM_i) for a transcript, wherein each of said PM_i is paired with one of said MM_i ;

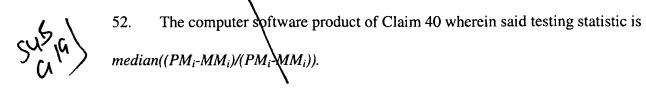
computer program code for calculating a p value using one sided Wilcoxon's signed rank test, wherein said p value is for a null hypothesis that θ =a threshold value and an alternative hypothesis that said θ > said threshold value, wherein said θ is a test statistic for intensity difference between said perfect match intensity values and mismatch intensity values;

computer program code for indicating whether said transcript is present based upon said p value; and

a computer readable media for storing said computer program codes.

- 40. The computer software product of Claim 39 wherein said testing statistic is $median(PM_{i-}MM_{i})$.
- 41. The computer software product of Claim 40 wherein said threshold value is zero.
- 42. The computer software product of Claim 40 wherein said threshold value is calculated using: $\tau_1 = c_1 \sqrt{median(PM_i)}$ wherein said c_I is a constant.
- 43. The computer software product of Claim 42 wherein threshold value is calculated using: $\tau_1 = c_1 \sqrt{mean(PM_i)}$ wherein said c_I is a constant.
- 44. The computer software product of Claim 40 wherein said computer program code of indicating comprises computer program code for indicating that said transcript is present if said p is smaller than a first significance level (α_1) .
- 45. The computer software product of Claim 44 wherein said significance level is 0.01-0.08.
- 46. The computer software product of Claim 45 wherein said first significance level is 0.04.

- 47. The computer software product of Claim 46 wherein said computer code for indicating further comprises computer program code for indicating that said transcript is absent if said p is greater than or equal to a second significance level (α_2).
- 48. The computer software product of Claim 47 wherein said second significance level is 0.04-0.08.
- 49. The computer software product of Claim 48 wherein said second significance level is 0.06.
- 50. The computer software product of Claim 49 wherein said first significance level (α_1) is smaller than said (α_2) and said computer program code of indicating further comprises computer program code for indicating that said transcript is marginally detected if $\alpha_1 \le p < \alpha_2$.
- 51. The computer software product of Claim 50 where first significance level is 0.04 and second significance level is 0.06.



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- 53. The computer software product of Claim 52 wherein said threshold value is a constant.
- 54. The computer software product of Claim 53 wherein said threshold value is around 0.001 to 0.05.
- 55. The computer software product of Claim 54 wherein said threshold value is around 0.015.
- 56. The computer software product of Claim 53 wherein said computer program code for indicating comprises computer program code for indicating that said transcript is present if said p is smaller than a first significance level (α_1).
- 57. The computer software product of Claim 56 wherein said significance level is 0.01-0.08.
- 58. The computer software product of Claim 57 wherein said first significance level is 0.04.
- 59. The computer software product of Claim 57 wherein said computer program code for indicating further comprises computer program code for indicating said transcript is absent if said p is greater than or equal to a second significance level (α_2) .

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- 60. The computer software product of Claim 59 wherein said second significance level is 0.04-0.08.
- 61. The computer software product of Claim 60 wherein said second significance level is 0.06.
- 62. The computer software product of Claim 60 wherein said first significance level (α_1) is smaller than said (α_2) and said computer program code for indicating further comprises computer code for indicating that said transcript is marginally detected if $\alpha_1 \le p < \alpha_2$.
- 63. The computer software product of Claim 62 where first significance level is 0.04 and second significance level is 0.06.
- 64. A computer software product comprising:

computer program code for providing a plurality of perfect match intensity values (PM_i) and background intensity values (B_i) for a transcript, wherein each of said PM_i is paired with one of said B_i ;

computer program code for calculating a p value using one sided Wilcoxon's signed rank test, wherein said p-value is for a null hypothesis that θ =a threshold value and an alternative hypothesis that said θ > said threshold value,

wherein said θ is a test statistic for intensity difference between said perfect match intensity values and background intensity values; and

computer program code for indicating whether said transcript is present based upon said p-value; and

a computer readable media for storing said codes.

- 65. The computer software product of Claim 64 wherein said testing statistic is $median(PM_i-B_i)$.
- 66. The computer software product of Claim 65 wherein said threshold value is zero.
- 67. The computer software product of Claim 66 wherein said threshold value is calculated using: $\tau_1 = c_1 \sqrt{median(PM_i)}$ wherein said c_I is a constant.
- 68. The computer software product of Claim 66 wherein threshold value is calculated using: $\tau_3 = c_3 \sqrt{mean(PM_i)}$ wherein said c_3 is a constant.
- 69. The computer software product of Claim 66 wherein said step of indicating comprises indicating said transcript is present if said p is smaller than a first significance level (α_1) .

- 70. The computer software product of Claim 69 wherein said significance level is 0.01-0.08.
- 71. The computer software product of Claim 70 wherein said first significance level is 0.04.
- 72. The computer software product of Claim 71 wherein said computer software code of indicating further comprises computer software code for indicating that said transcript is absent if said p is greater than or equal to a second significance level (α_2).
- 73. The computer software product of Claim 72 wherein said second significance level is 0.04-0.08.
- 74. The computer software product of Claim 73 wherein said second significance level is 0.06.
- 75. The computer software product of Claim 73 wherein said first significance level (α_1) is smaller than said (α_2) and said code for indicating further comprises code for indicating that said transcript is marginally detected if $\alpha_1 \le p < \alpha_2$.
- 76. The computer software product of Claim 75 where first significance level is 0.04 and second significance level is 0.06.



77. A system for determining whether a transcript is present in a biological sample comprising:

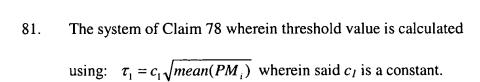
a processor; and

a memory being coupled to the processor, the memory storing a plurality of machine instructions that cause the processor to perform a plurality of logical steps when implemented by the processor, said logical step comprising:

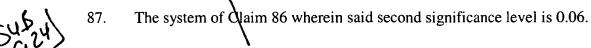
providing a plurality of perfect match intensity values (PM_i) and mismatch intensity values (MM_i) for the transcript, wherein each of the PM_i is paired with one of the MM_i ;

calculating a p-value using one-sided Wilcoxon's signed rank test, wherein the p-value is for a null hypothesis that θ =a threshold value and an alternative hypothesis that said θ > said threshold value, wherein said θ is a test statistic for intensity difference between said perfect match intensity values and mismatch intensity values; and indicating whether said transcript is present based upon said p-value.

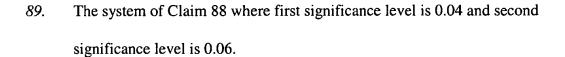
- 78. The system of Claim 77 wherein said testing statistic is $median(PM_i-MM_i)$
- 79. The system of Claim 78 wherein said threshold value is zero.
- 80. The system of Claim 78 wherein said threshold value is calculated using: $\tau_1 = c_1 \sqrt{median(PM_i)}$ wherein said c_I is a constant.



- 82. The system of Claim 78 wherein said step of indicating comprises indicating said transcript is present if said p is smaller than a first significance level (α_1) .
- 83. The system of Claim 82 wherein said significance level is 0.01-0.08.
- 84. The system of Claim 83 wherein said first significance level is 0.04.
- 85. The system of Claim 83 wherein said step of indicating further comprises indicating said transcript is absent if said p is greater than or equal to a second significance level (α_2) .
- 86. The system of Claim 85 wherein and second significance level is 0.04-0.08.



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 - The system of Claim 87 wherein said first significance level (α_1) is smaller than said (α_2) and said step of indicating further comprises indicating said transcript is marginally detected if $\alpha_1 \le p < \alpha_2$.



- 90. The system of Claim 76 wherein said testing statistic is $median((PM_i-MM_i)/(PM_+MM_i))$.
- 91. The system of Claim 77 wherein said threshold value is a constant.
- 92. The system of Claim 91 wherein said threshold value is around 0.001 to 0.05.
- 93. The system of Claim 92 wherein said threshold value is around 0.015.
- 94. The system of Claim 91 wherein said step of indicating comprises indicating said transcript is present if said p is smaller than a first significance level (α_1).
- 95. The system of Claim 94 wherein said significance level is 0.01-0.08.
- 96. The system of Claim 95 wherein said first significance level is 0.04.
- 97. The system of Claim 96 wherein said step of indicating further comprises indicating said transcript is absent if said p is greater than a second significance level (α_2) .



99. The system of Claim 98 wherein said second significance level is 0.06.

- 100. The system of Claim 98 wherein said first significance level (α_1) is smaller than said (α_2) and said step of indicating further comprises indicating said transcript is marginally detected if $\alpha_1 \le p < \alpha_2$.
- 101. The system of Claim 100 where first significance level is 0.04 and second significance level is 0.06.
- 102. A system for determining whether a transcript is present in a biological sample comprising:

A processor; and

A memory being coupled to the processor, the memory storing a plurality machine instructions that cause the processor to perform a plurality of logical steps when implemented by the processor; said logical step comprising:

providing a plarality of perfect match intensity values (PM_i) and background intensity values (B_i) for said transcript, wherein each of said PM_i is paired with one of said B_i .

calculating a p value using one sided Wilcoxon's signed rank test, wherein said p value is for a null hypothesis that θ =a threshold value and an alternative hypothesis that said θ > said threshold value, wherein said θ is a test statistic for intensity difference between said perfect match intensity values and background intensity values; and

indicating whether said transcript is present based upon said p value.

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